

EDITORIAL

Can you add value beyond the ICU? The nursing challenge in systems of Rapid Response[☆]



¿Puedes aportar valor más allá de la UCI? El reto de la enfermería en los Sistemas de Respuesta Rápida

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As intensive care nurses we have been asked the question, what happens when a patient deteriorates in a hospital ward? If we respond to this question with evidence we know that up to 50% of patients did not receive optimum care prior to admission to the ICU and this impairs their mortality and prognosis compared to those who were admitted from the emergency services or the operating theatre. With regard to the cardiopulmonary arrest unit ward it is known that up to 80% arrests are preventable, and that between 6 and 48 h before they happen there are detectable clinical parameters which would have helped to prevent them. The result of these and other circumstances is that 40% of ICU admission could have been prevented. It is known that the delay in early recognition and treatment of these patients, and especially in time-dependent pathologies such as sepsis, acute myocardial infarction, ictus or vital sign risk situations increases mortality, mean hospital and ICU stay, complications and the unscheduled complications or admission or emergency admissions in the said unit.^{1,2}

Why does this occur? The literature describes many factors. The health system is hierarchical and we treat patients with an approach based on specialities, creating “care silos” where the patient is usually divided by areas of specialisation. Furthermore, healthcare is “step by step” based, derived from the hierarchical model of interconsultation: when a patient’s status worsens, the nurses normally have to decide without a guide whether the changes they observe are relevant enough or not to notify the next care level. After this, they consult a resident doctor, who then consults with the attendant physician, who in turn may need an interconsultation with another specialist, resulting in delayed procedures and the patient’s admission into the ICU is subsequently delayed.² McQuillan also attributes the suboptimal care for ICU admission to factors such as the failure to detect and appreciate a clinical emergency, the lack of request for expert help, not having available training and appropriate skills, and not having a clinical supervision system, among others.¹

What is the solution? At the end of the 1990s, the organisations which were aware of their inefficient approach toward patients at risk of deterioration who were not in the ICU began to put forward new models of approach to care. As a result in the United Kingdom the concept of *Comprehensive Critical Care emerged*.³ And in United States the *Critical Care without Walls* where the patient became the focus of care, breaking down barriers of care silos. The care process became focused on the complexity of each individual patient, regardless of where they happened to

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be located in the building. The study, implementation and development of these models resulted in what today is known as Rapid Response Systems (RRS). This term became important in the year 2005, because the "Institute for Health-care Improvement" (IHI) in its campaign "let's save 100,000 lives" proposed as one of its six improvement action steps the creation of the RRS. In turn, since 2009 the Joint Commission established the creation of the RRS as one of its national objectives for patient safety.⁴

Intensive care has emerged from the ICU, the team of intensive professionals encourage early interaction with patients at risk, breaking down barriers to the interconsultation hierarchy as a result. The trained teams attend to and manage at risk patients, overcoming the "step by step" model. The spectrum therefore expands, action does not only take place in a critical moment of the disease but previous processes of deterioration are also addressed as is posterior recovery.³

How does a RRS work? When a situation of clinical deterioration presents, it is essential that this is detected wherever the patient happens to be and that the system is alerted. This is the function of the RRS "afferent component". Any professional may activate it (nurse, resident doctor, nursing assistants, physiotherapist, etc.) with nurses being those who activate it most frequently, and even in some institutions the family member or patient themselves may do so. Activation is carried out in many situations, the most frequent of which are: when the patient meets with a code criteria (cardiac arrest, sepsis, trauma, obstetrics, medical emergency, massive haemorrhage, etc), or when there are relevant physiological criteria in line with single or multiparametric scales (National Early Warning Score -NEWS-, Medical Emergency Team -MET- criteria, etc), which the professional or family members feels is a concern, or that an interconsultation derived from activation is undertaken.^{2,4} One of the successful factors of the afferent branch is the standardised use of scales which evaluate risk or severity, among which the NEWS scale is notable or its second version NEWS2. This scale uses parameters which fit into the standard taking of vital signs, and offers a score which indicates what the next step to be taken is, such as closer vigilance, asking for help or even directly activating a team with advanced skills.⁵

Once activation has been carried out we need a component which offers a response which is called "efferent". In general, response is integrated by interprofessional teams with a profile of critical care who have knowledge, advanced material resources, mentorship and leadership for addressing complex situations in any location.⁴ Depending on the country and the structure of the organisation, the teams have different traits with regards to leadership, composition and resources. No evidence proves the superiority of any one model against another. Regarding leadership, in general, this is adopted by physicians. In the United Kingdom and the United States there are teams led by nurses too.⁶ As for composition, a classical example are the cardiac arrest teams which later evolved into emergency response teams. They mostly act according to codes and cardiac arrests and their response is reactive; whenever they are called they go where needed.² In contraposition to this there are proactive models (or at least more reactive) such as the *Critical Care Outreach* which actively monitors and seeks at risk patients

and situations. What is interesting is that these interprofessional teams not only provide beside management capacity and cover for the critically ill patient but also in many of the more developed systems they act as consultants. They help to manage situations of non resuscitation, carry out follow-up after ICU discharge, help in training process for risk detection, offer feedback to professionals in care areas after actions have been taken and have competences for patient safety, acting as a monitor to detect and resolve possible breaches in continuous care security.^{7,8}

Lastly, the RRS have a management and administrative component which assists implementation, institutional relationships and training and with the quality improvement component they audit, record and analyse actions taken to offer feedback and propose improvements.²

What is the situation in Spain? In 2010, two reports on ICU and hospitalisation unit standards and recommendations from the Ministry of Health and Social Policy recommended the implementation of "Enhanced Critical Care Services" (SACC for its initials in Spanish), which is now known as Rapid Response Systems.^{9,10} In 2014 the SACCs were included as a point of the system of Intensive Care Auditing for this Ministry. In 2017 the Catalan Institute of Health (ICS for its initials in Spanish) created the project VIDA (Vigilance and identification of acute deterioration). The reality is that in the majority of health centres in Spain, there are response models to patients who have suffered from cardiorespiratory arrest, in other emergency teams which respond when the patient deteriorates, and even more advanced models such as the ICU without walls in the Hospital Universitario del Henares 11 or the team of the Hospital Universitario Marqués de Valdecilla which has broad experience, together with more recent initiatives in Valencia, Catalonia, Asturias, etc.

What are the challenges to this reality? From our point of view, the challenge rests on two levels: the transformation of the current model of cardiac arrest or emergency teams to Rapid Response Systems, and the provision of an autonomous role through training for the nurses within these systems.

The initial challenge is to encourage current response teams to patients suffering from cardiac arrests or who have deteriorated to evolve into Rapid Response Systems, where a comprehensive approach is made not just as a response to the critical patient, but to a standardization of notification, institutional relationships, training, quality and safety as suggested by the Ministry.⁹

We believe that the transformation is possible and may be carried out in stages. As a first step we would suggest the standardization of an afferent component within the institution. This would lead to activating the efferent component after systematically detecting at risk patients. We may achieve this with the implementation of a NEWS type scale, combined with training and consciousness-raising of the staff in the hospital wards and other services.⁵ It is obvious that technological investment combined with the afferent system for the automatization of constants and/or analytical values with alerts improves the process and capacity of detection considerably.¹¹ This would be an ideal situation but if there is not sufficient budget for technological investment, initiatives may still be undertaken to change the afferent system since standardizing detection and guiding decision-making according to risk may offer professionals

from hospital wards and other services a significant improvement in levels of detection and early treatment.⁵ Once implemented, we would suggest a detailed analysis of the type of risk situations facing the hospital be performed, which would lead to a better awareness of the human and material resource needs for adaptation of the existing model. Once the needs and budget had been prepared, an interprofessional team would be appointed which would ideally work exclusively in RRS on the days appointed for the same, with no care burden in the ICU, and with the ability to take advantage of non care assistance working hours to participate in training programmes (updates, in situ simulation, etc.) audits, consultancies and the detection, analysis and solution of security breaches.

The second challenge and perhaps the more interesting one, is the promotion of nurse into interprofessional teams. In the most developed Rapid Response Systems, such as the Critical Care Outreach existing in United Kingdom, the nurse's role is one of advanced competences, with the capacity to assess patients at risk and take medical decisions, undertake ICU discharge follow-ups, take part in decisions regarding non resuscitation or treatment limitation, participate and/or lead emergency codes (arrest, sepsis, trauma, etc), act as a consultant and offer support to nurses, doctors and other professionals from other services, offer feedback on actions, create training plans according to shortcomings observed, form part of audit teams, issue clinical guides and analyse the breaches in security, suggesting solutions in incident review panels.^{7,8}

One of the main barriers to developing these positions in Spain is the lack of a defined pathway in the training and accreditation of nurses specializing in critical care. Possessing a critical capacity and developing the ability to independently confront complex problems based on evidence requires formal training, which includes mentorship and feedback in the clinical field, and also periodical training and assessment to guarantee being up to date and competent. Also, in the Spanish context, organisation culture, independent practice and decision-taking may be regarded as intrusiveness.

It is our belief, in a similar light to the first challenge, that a step by step path of action could be established in the creation of this figure. Although there is no national critical care nursing specialty, certain professionals in the hospital have this profile because they already possess the necessary competences for being model or benchmark professionals to undertake the role of consultant. These nurses have knowledge, skills, abilities and experience in critical care, they are able to undertake risk assessment and analysis and to infer result in critical situations. They also possess transversal skills such as empathy, critical and reflexive capacity, the ability to work in the interprofessional team and abilities of leadership, mentorship and feedback.^{2,7,8}

The creation of nurse consultants in critical care who work within the rapid Response System will help us to bridge the gap between hospital wards and the ICU. On the one hand, the opportunity presents itself to formalise "peer to peer" consultations with nurses working on the ward, because it is well known that often notification of a risk situation is delayed due to fear, error, or bad judgment.² On the other hand once the patient's condition has been detected, the consultant could offer advice and support in situ so that

patient care did not deteriorate, thus offering critical care skills to hospital ward areas.⁷

The way forward towards nurses with advanced competences is not possible without an interdisciplinary team that works together as a whole, with a patient-targeted focus and backed up by institutional support and recognition.

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